# NISTIR 6030

# THIRTEENTH MEETING OF THE UJNR PANEL ON FIRE RESEARCH AND SAFETY, MARCH 13-20, 1996

# VOLUME 1

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Opening Remarks

Zukoski Symposium

Jack E. Snell

It is both an honor and a pleasure for me to comment at this Symposium honoring the work and influence of Professor Edward Zukoski, of Cal Tech. I first met the good professor in Tokyo at my first UJNR meeting in May of 1982.

I have experienced the influence of Professor Zukoski in a number of modes - as a keen researcher and superb experimentalist: as a source of technical inspiration; as a backer and supporter of the cause of fire research in the nation; as warm, caring person and good humored friend; and even as a prod when in his judgment, I, as a relative newcomer to fire research management, have needed his "guidance".

Let me expand on just a few of these influences with specific examples. Ed is a survivor - he is one of the longest standing grantees of the NIST Fire Research Program, with a nearly unbroken string of projects dating from 1978. In this time, his contributions - in addition to mentoring grant monitors such as Rockett, Quintiere, Jones and Cooper - have covered a range of topics, e.g.,

- Two room fire model that formed the basis for the widely used ASET model,
- Entrainment in the upper and lower layers that we heard referenced earlier in the week by Jay Gore,
- Vertical flows in tall shafts that produced the basis for the algorithms for solving smoke flows in shafts in our current fire models,
- Flow visualization of horizontal flows providing a dataset to verify our CFD models,
- Seminal baseline data on the production of CO in fires burning in two layer environments

Paraphrased in Len Cooper's inimical style, "Ed displayed a unique ability for identifying, and successfully solving experimentally, with a unique elegance and clarity, the fundamental research problems of compartment fire phenomena."

Later in the day, Pat Pagni will tell of Ed's influence in his daughter. Well, Ed swayed mine as well. As luck would have it, my daughter came of age for "the science fair project" about the same time Ed's 1985 Howard Emmons award lecture was being presented for him, in absentia, by Professor Kubota. A lifelong aficionado of flow visualization techniques, myself, I "suggested" to my daughter she use this approach to demonstrate the importance of smoke detectors and their proper placement in the home. We developed a two dimensional model of a two story house which nicely illustrated the principles involved. My daughter and I had a great time working together on the project. I was sure it would be a winner. (The judges unfortunately thought they saw too many of my fingerprints on it and passed it off with an honorable mention.) Nonetheless, this was her first venture into the scientific realm and it stuck. She is now working hard but

joyfully to become a pediatrician. Thanks, Ed.

When fire research was dropped from the Reagan budgets, Ed was quick to pitch in to help rectify the situation. The good news is that this effort, small as it is does continue. Without such support, it probably would have gone the route of the recently -deceased Bureau of Mines.

For all of this, Ed, and on behalf of the U.S. Panel and the entire staff of the Fire Research Program at NIST, we thank and applaud you.